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Adipose lipid turnover and long-term changes in body weight

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Supplementary Tables

Supplementary Table 1. Changes in anthropometric phenotype versus changes (delta) in adipose tissue triglyceride age in Cohort 1

<i>Regressor</i>	<i>Slope</i>		<i>Intercept</i>	
	<i>r-value</i>	<i>p-value</i>	<i>Standard coefficient</i>	<i>p-value</i>
Body weight	0.07	0.63	0.62	<0.0001
Total body fat (impedance)	0.04	0.80	0.61	<0.0001
ESAT (by formula)	0.06	0.68	0.62	<0.0001
Body mass index	0.07	0.64	0.62	<0.0001
Fat cell volume	0.03	0.85	0.63	<0.0001
Fat cell number	0.06	0.67	0.65	<0.0001

Linear regression analysis was performed. Values for regressors and triglyceride age were calculated as second minus first examination. ESAT = weight of estimated abdominal subcutaneous adipose where the fat biopsy was taken.

Supplementary Table 2. Changes in anthropometric phenotype versus changes (delta) in log K_{in} for adipose tissue triglyceride age in Cohort 1

<i>Regressor</i>	<i>Slope</i>		<i>Intercept</i>	
	<i>r-value</i>	<i>p-value</i>	<i>r-value</i>	<i>p-value</i>
Body weight	0.51	<0.0001	-0.11	<0.0001
Total body fat (impedance)	0.60	<0.0001	-0.10	<0.0001
ESAT (by formula)	0.64	<0.0001	-0.10	<0.0001
Body mass index	0.52	<0.0001	-0.11	<0.0001
Fat cell volume	0.44	0.001	-0.08	0.001
Fat cell number	0.12	0.40	-0.11	0.0002

Linear regression analysis was performed. Values for regressors and triglyceride age were calculated as second minus first examination. ESAT = weight of estimated abdominal subcutaneous adipose where the fat biopsy was taken.

Supplementary Table 3. Additional clinical data in cohorts 1 and 2

	<i>Cohort 1</i>			<i>Cohort 2</i>		
<i>Measure</i>	<i>First exam</i>	<i>Second exam</i>	<i>p-value</i>	<i>First exam</i>	<i>Second exam</i>	<i>p-value</i>
Total body fat, kg, DEXA	-	-	-	62 ±11	39 ±13	<0.0001
Fat cell volume, picolitres	752 ± 173	595 ± 245	<0.0001	1003 ± 178	494 ± 182	<0.0001
Fat cell number x 10 ⁷	507 ± 97	659 ± 380	0.0002	432 ± 145	551 ± 192	<0.0001
P-glucose, mmol/l	5.5 ± 1.3	6.1 ± 1.9	0.07	5.6 ± 1.3	5.0 ± 0.7	0.005
S-insulin, mU/l	12 ± 7	11 ± 7	0.36	16 ± 9	6 ± 3	<0.0001
P-total cholesterol, mmol/l	4.7 ± 0.9	4.6 ± 0.8	0.36	4.9 ± 1.0	4.3 ± 0.8	0.0002
P-HDL cholesterol, mmol/l	1.2 ± 0.4	1.5 ± 0.2	<0.0001	1.1 ± 0.3	1.6 ± 0.5	<0.0001
P-triglycerides, mmol/l	1.3 ± 1.3	1.0 ± 0.4	0.08	1.5 ± 0.7	1.0 ± 0.5	<0.0001
LFI	77 ± 21	64 ± 30	0.14	97 ± 3	53 ± 31	<0.0001
BITE-A, scores	7.6 ± 6.4	6.6 ± 6.3	0.21	9.1 ± 6.6	6.1 ± 5.4	0.002
BITE-B, scores	1.1 ± 2.2	1.3 ± 1.9	0.40	2.7 ± 3.8	1.1 ± 2.4	0.02
Visceral fat, kg, DEXA	-	-	-	2.3 ± 0.9	0.9 ± 0.6	<0.001

Values are mean $\pm$ SD and compared by paired t-test. DEXA = dual X-ray absorptiometry. P = fasting plasma. S = fasting serum. Fat cell size and number are representative of the area of abdominal subcutaneous adipose biopsy. BITE A and B are eating behavioral scores and LFI is liver fat index, see Online Methods.

Supplementary Table 4 Changes in adipose triglyceride age over time in subgroups

	<i>Subgroup</i>		<i>Triglyceride age</i>		<i>p-value</i>
		<i>n</i>	<i>First examination</i>	<i>Second examination</i>	
Cohort 1	Overweight/obese at 18 years	21	2.8 ± 0.6	3.2 ± 0.8	0.02
	Lean at 18 years	30	2.4 ± 0.6	3.2 ± 0.7	<0.0001
	Stable body weight last year, before second examination	44	2.6 ± 0.7	3.1 ± 0.1	0.0001
	Unstable body weight last year, before second examination	10	2.5 ± 0.6	3.4 ± 0.4	0.003
	Unchanged menstruation status	19	2.7 ± 0.7	3.2 ± 0.8	0.008
	Changed menstruation status	26	2.5 ± 0.6	3.2 ± 0.7	0.0003
	Bariatric surgery patients excluded	44	2.6 ± 0.7	3.2 ± 0.7	<0.0001
	No important change in medication	47	2.5 ± 0.7	3.2 ± 0.7	<0.0001
Cohort 2	Unchanged menstruation status	28	3.2 ± 2.0	2.6 ± 2.1	0.23
	Changed menstruation status	13	3.0 ± 1.1	3.0 ± 2.2	0.99
	No important change in medication	35	3.0 ± 2.1	2.9 ± 2.1	0.74

Values are mean ±SD and compared by paired t-test. Overweight/obesity = body mass index > 25 kg/m². Stable body weight = < 7% change over time. Stable menstruation status = regular menstruation all the time or unregular menstruation/menopause all the time. Juvenile/adult onset obesity is based on a body mass index > 30 kg/m² at 18 years of age.